

QUARTERLY REPORT
NASA CONTRACT NAS5-31368
FOR MODIS TEAM MEMBER STEVEN W. RUNNING
ASSOC. TEAM MEMBERS E.RAYMOND HUNT, RAMAKRISHNA R. NEMANI
15 APRIL 1994

Activities of Team Member SWRunning

SWR gave a talk on MODLAND products, and global NPP in particular at the EOS IWG Working group meeting in San Antonio, TX, on Jan 11-13.

SWR hosted Dr. Compton Tucker from GSFC for seminars at the University of Montana, April 11-12, on global biospheric analysis.

Algorithm Theoretical Basis Documents (ATBDs)

Ray, Rama and SWR produced revised ATBDs for our leaf area index (LAI) and fraction absorbed photosynthetically active radiation (FPAR) products, and our photosynthesis (PSN)-net primary production (NPP) products, and submitted these in February 1994.

EOS-LTER interaction

SWR met with NSF officials in Wash, D.C., March 30-31 concerning the joint submission of a proposal from 13 LTER sites to NSF and NASA for a ground validation network.

BOREAS

SWR hosted a Boreas Modelers meeting on February 6-9 in Missoula MT. The outcome of the workshop is printed in The Boreas Experimental Plan, Appendix M.

MODLAND journal paper

Publication of the MODLAND journal paper in Int. J. Remote Sensing is anticipated this Summer, according to the Editor, John Townshend.

Global landcover

SWR presented the MODLAND plan for Landcover classification at the IGBP-DIS Landcover Working Group meeting in Las Vegas in February 23-24.

SWR also spoke at the ISLSCP meeting in Tucson March 21 - 25 on landcover and LAI products for EOS.

SWR attended a meeting on radar applications for Soil Moisture in San Fransisco, Jan 26 - 28.

Activities of Assoc Team Member E.R.Hunt

Ray Hunt attended the Oak Ridge Land DAAC Science Advisory Group in March.

Activites of Assoc. Team Member R.R.Nemani

RNemani built proto-type versions of algorithms for deriving FPAR and LAI from MODIS data for the ATBDs. A sensitivity analysis of various parameters in the algorithms is being undertaken using

a 3-D canopy radiation model.

A new landcover classification has been completed, based on the logic of Running et al in Ambio (1994), involving an innovative use of surface temperature to discriminate different biomes. Different biomes have inherent canopy geometric properties that produce differential plant cover and large differences in observed surface temperature, which are used in the new classification.

PUBLICATIONS

Running, S.W., C.O.Justice, V.Salomonsen, D.Hall, J.Barker, Y.J.Kaufmann, A.H.Strahler, A.R.Huete, J-P.Muller, V.Vanderbilt, Z.M.Wan, P.Teillet, D.Carnegie . 1993. Terrestrial remote sensing science and algorithms planned for EOS/MODIS. Int. J. Remote Sensing (in press).

Kremer, R.G. and S.W.Running. 1993. Community type differentiation using NOAA/AVHRR data within a sagebrush-steppe ecosystem. Remote Sensing of Environment 47:1-25.

Running, S.W., T.R.Loveland, L.L.Pierce and E.R.Hunt Jr. 1994. A remote sensing based vegetation classification logic for global land cover analysis. Remote Sensing of Environment (in press)

Running, S.W., T.R.Loveland, and L.L.Pierce. 1994. A remote sensing based vegetation classification logic for use in global biogeochemical models. Ambio 23:77-81.

Zheng, D. E.R Hunt Jr. and S.W. Running. 1993. A daily soil temperature model based on air temperature and precipitation for continental applications. Climatic Research 2:183-191.

Ford, R. S.W.Running and R.R.Nemani. 1994. Large scale terrestrial ecosystem modeling. IEEE Computational Science and Engineering (in press)

White, J.D. and S.W.Running. 1994. Testing scale dependent assumptions in regional ecosystem simulations. J.Vegetation Science (in press)

Pierce, LL, SW Running and R.Nemani 1994. The effects of aggregating sub-grid land surface variation on regional scale estimates of net primary production. Landscape Ecology (submitted)

Hunt, E.R.Jr. 1994. Relationship between woody biomass and PAR conversion efficiency for estimating net primary productivity from NDVI. Int J. Remote Sensing (in press)

Nemani, R. and S.W.Running. 1994. "MODIS Land cover characterization using RED, NIR and TIR from AVHRR." (in preparation)

